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(71) Applicants (for all designated States except US): **MELNICK, Geoffrey, Lionel [GB/IL]; 38 The Vale, Golders Green, London NWII 8SG (GB). LIVNEH, Rafael [IL/IL]; Hechalutz Street 27, 46795 Herzlia (IL).**

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BLOOM, Corinne [/]; Herz Street 84, Rishon Letsion (IL).**

(74) Common Representative: **MELNICK, Geoffrey, Lionel; 38 The Vale, Golders Green, London NWII 8SG (GB).**

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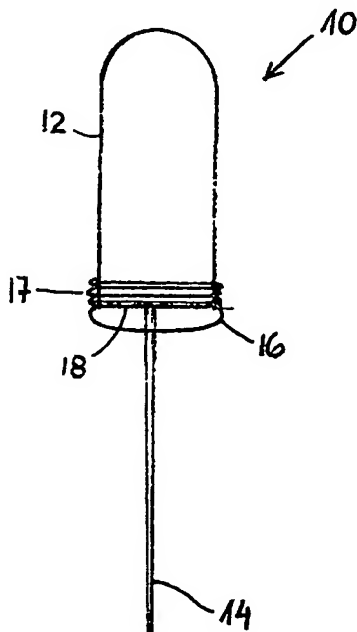
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(54) Title: **HYGIENICALLY DISPOSABLE TAMPON**

(57) Abstract: A tampon comprising a tampon body having a head end and a tail end, and a sheath attached to said tail end, said sheath being of a sufficient length to reach back over said head to cover and hygienically close said tampon body. The act of reaching back over inverts the sheath, thereby presenting a clean outer covering.



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Hygienically Disposable Tampon

Field of the Invention

The present invention relates to feminine hygiene device and more
5 particularly to a hygienically disposable tampon.

Background of the Invention

Sanitary protection products, such as tampons, are most often disposed
of by wrapping in toilet paper and throwing away. Should the user not be in a
10 place where disposal is convenient, then one solution is to use a type of tampon
that is generally commercially available with individual protective wraps. To
use the typical tampon, the wrap is opened, and the tampon is removed from
the wrap and inserted within the body. In order to assist with hygienic
disposal, the wrapping should be retained so that it can be used to store the
15 used tampon. The user is thus typically required to retain the initial packaging
in order to facilitate hygienic disposal.

An exemplary patent showing the use of product packaging to dispose of
a tampon applicator is US Patent No. 5,133,457.

Summary of the Invention

According to a first aspect of the present invention there is thus provided a tampon comprising a tampon body having a first end and a second end, and a sheath attached substantially at the first end, the sheath being of a sufficient
5 length to cover and close the tampon body when extended past the second end. The tampon may thus be covered by the sheath to form a hygienically wrapped tampon for disposal.

Preferably, the sheath has a first surface and a second surface and is attached to the first end. In a first, in use state, the sheath presents the first
10 surface outwardly whilst extending from the first end away from the tampon body.

Preferably, the sheath presents the second surface outwardly when the sheath is extended over the tampon body towards the second end to form the disposable state.

15 Preferably, the first end is a tail end of the tampon body and the second end is a head end of the tampon body.

The tampon preferably comprises a withdrawal string attached to the tail end of the tampon body.

Preferably, the withdrawal string is of sufficient length to extend along
20 the tampon body to tie the sheath at the head end, thereby to close the tampon body within the sheath to form the disposable state.

Preferably, the sheath is at least twice as long as the tampon body.

In a particularly preferred embodiment, the sheath is substantially three times as long as the tampon body.

Preferably, the withdrawal string is substantially longer than the sheath.

5 In a particularly preferred embodiment, the withdrawal string is substantially a third longer than the sheath.

Preferably, the sheath comprises a liquid impervious material, which may for example be plastic or rubber or nylon. In any of the embodiments the sheath may be attached to the tampon body using any suitable method,
10 including fusing, gluing and stitching. Preferably the attachment is itself liquid impermeable.

According to a second aspect of the present invention there is provided a method of manufacturing a hygienically disposable tampon comprising:

taking a tampon body having a head end and a tail end, and

15 attaching a sheath, being longer than a length of the tampon body, to the tail end.

Preferably the method further comprises attaching a withdrawal string to the tail end, the withdrawal string being of sufficient extension from the tail end to reach above the head end to close to the sheath over the head end.

20 Preferably the method further comprises using a material substantially impervious to fluids to form the sheath.

The sheath may for example be plastic or rubber or nylon.

According to a third aspect of the present invention there is provided a tampon comprising a tampon body having a first end and a second end and a sheath having a first side and a second side, attached to the first end, the
5 tampon having an in-use state with the sheath extending distally from the first end with the first side presented outwardly, the tampon further having a second, disposal state with the sheath extending from the first end to the second end and closed over the second end with the second side presented outwardly.

Preferably the tampon further comprises a withdrawal string attached to
10 the first end, the withdrawal string being of sufficient length to extend beyond the second end to close the sheath beyond the second end in the disposal state.

Brief Description of the Drawings

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, purely by way of
5 example, to the accompanying drawings,

With specific reference now to the drawings in detail, it is stressed that the particulars shown are by way of example and for purposes of illustrative discussion of the preferred embodiments of the present invention only, and are presented in the cause of providing what is believed to be the most useful and
10 readily understood description of the principles and conceptual aspects of the invention. In this regard, no attempt is made to show structural details of the invention in more detail than is necessary for a fundamental understanding of the invention, the description taken with the drawings making apparent to those skilled in the art how the several forms of the invention may be embodied in
15 practice. In the accompanying drawings:

Fig. 1 is a simplified drawing of a tampon according to a first preferred embodiment of the present invention in a state prior to hygienic disposal,

Fig. 2 is a simplified drawing of a tampon according to a first preferred embodiment of the present invention in a first stage of hygienic disposal,

20 Fig. 3 is a simplified drawing of a tampon according to a first preferred embodiment of the present invention during a second stage of hygienic disposal,

Fig. 4 is a simplified drawing of a tampon according to a first preferred embodiment of the present invention during a wrapping stage of hygienic disposal,

Fig. 5 is a simplified drawing of a final stage of hygienic disposal, and

5 Fig. 6 is a simplified drawing showing an approximately to scale drawing of a prototype of a tampon according to the present invention.

Description of the Preferred Embodiments

10 Before explaining at least one embodiment of the invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and the arrangement of the components set forth in the following description or illustrated in the drawings. The invention is applicable to other embodiments or of being practiced or carried out in various ways.
15 Also, it is to be understood that the phraseology and terminology employed herein is for the purpose of description and should not be regarded as limiting.

Reference is now made to Fig. 1, which is a simplified schematic drawing of a tampon according to a first embodiment of the present invention. A tampon 10 comprises a tampon body 12 and a withdrawal string 14 attached
20 to a tail end 18 of the tampon body 12. Additionally, wrapped around the tail end 18 of the tampon body 12 is a membranous sheath or sleeve 16, which,

when opened out is long enough to cover the tampon body with room to spare. The sheath is preferably either glued or stitched onto the tail end of the tampon although any suitable method of attachment may be used. The sheath preferably has a funneled distal end 21.

- 5 The sheath may be made out of any kind of plastic including nylon or of any other material which is substantially impermeable to the passage of blood and like fluids that are to be found on a used tampon.

The tampon is inserted in the normal way, and is withdrawn after use in the normal way, preferably using withdrawal string 14.

- 10 Reference is now made to Fig. 2, which is a simplified diagram showing the tampon of Fig. 1 with the sheath 16 unrolled. As an alternative to the embodiment of Fig. 1, it is possible to supply the tampon with the sheath in the unrolled state. Alternatively the user may unroll the sheath following withdrawal. In order to assist with unrolling, so that unrolling may be carried
15 out without soiling the hands, an unrolling string may be attached to the end of the sheath. In the rolled embodiment of Fig. 1, it is important to roll or fold the sheath such that the side of the sheath facing outwardly in the rolled state faces inwardly in the later state to be discussed below in which the sheath closes the tampon.

- 20 Reference is now made to Figs. 3A and 3B, which are simplified diagrams showing the tampon after being removed and in an early part of a wrapping stage of the hygienic disposal procedure. The user inserts one or

more fingers into a funneled end of the sheath 16, subsequently stretching the sheath and then inverting the sheath and pushing it over the tampon body 12. Fig. 3B is a slightly more advanced stage than Fig. 3A in the inversion process showing the membrane further stretched from inside the funneled end 21, prior
5 to inverting over the tampon body.

Reference is now made to Fig. 4, which is a simplified drawing showing a further part of the hygienic disposal procedure of the tampon 10. In Fig. 4, the inverted sheath 14 is pulled over the head end 19 of the tampon body 12. It will be appreciated that the act of inverting the sheath 16 ensures that the clean
10 side of the sheath is outwardly exposed, as opposed to the side that was exposed when the tampon was in use and which it is desired not to expose for disposal.

Reference is now made to Fig. 5, which is a simplified schematic diagram showing a final stage of the disposal procedure of the tampon. In Fig.
15 5, the distal end of the sheath, now extending past the head end 19 of the tampon body 12 is preferably tied using the end of the withdrawal string 14, thus hygienically sealing the tampon to form a package for disposal.

Reference is now made to Fig. 6, which is a simplified approximately to scale drawing of a prototype of the tampon 10. Parts that are
20 the same as those in previous figures are given the same reference numerals and are not described again except as necessary for an understanding of the present embodiment. In Fig. 6, the tampon body 12 has a length of between 40 and 50mm. The extended sheath 16 prior to inversion is approximately 80mm

and the withdrawal string 14 is approximately 120mm, that is to say approximately a third longer than the sheath itself, the sheath being approximately three times as long as the body 12. The funneled end 19 of the sheath preferably has a diameter of around 17mm to allow easy insertion of the user's finger. It will be appreciated that the measurements given are exemplary only, the skilled person being aware of the ranges that each of the dimensions may take. Likewise the skilled person will be aware of leeway in the proportions referred to hereinabove.

It is appreciated that certain features of the invention, which are, for clarity, described in the context of separate embodiments, may also be provided in combination in a single embodiment. Conversely, various features of the invention which are, for brevity, described in the context of a single embodiment, may also be provided separately or in any suitable subcombination.

It will be appreciated by persons skilled in the art that the present invention is not limited to what has been particularly shown and described hereinabove. Rather the scope of the present invention is defined by the appended claims and includes both combinations and subcombinations of the various features described hereinabove as well as variations and modifications thereof which would occur to persons skilled in the art upon reading the foregoing description.

Claims

1. A tampon comprising a tampon body having a first end and a second end, and a sheath attached substantially at said first end, said sheath being of a sufficient length to cover and close said tampon body when extended past said second end.

2. A tampon according to claim 1, said sheath having a first surface and a second surface and being attached to said first end and in a first, in use state, presenting said first surface outwardly whilst extending from said first end away from said tampon body.

3. A tampon according to claim 2, said sheath presenting said second surface outwardly when said sheath is extended over said tampon body towards said second end to form a second, disposable state.

4. A tampon according to claim 1, wherein said first end is a tail end of said tampon body and said second end is a head end of said tampon body.

5. A tampon according to claim 4, having a withdrawal string attached to said tail end of said tampon body.

6. A tampon according to claim 5, wherein said withdrawal string is of sufficient length to extend along said tampon body to tie said sheath at said head end, thereby to close said tampon body within said sheath.

7. A tampon according to claim 6, said sheath being at least twice as long as said tampon body.

8. A tampon according to claim 6, said sheath being substantially three times as long as said tampon body.

9. A tampon according to claim 6, said withdrawal string being substantially longer than said sheath.

10. A tampon according to claim 9, said withdrawal string being substantially a third longer than said sheath.

11. A tampon according to claim 1, said sheath comprising a liquid impervious material.

12. A tampon according to claim 11, said liquid impervious material being plastic.

13. A tampon according to claim 12, said plastic being nylon.

14. A tampon according to claim 11, said liquid-impervious material being rubber,

15. A tampon according to claim 1, said sheath being attached to said

16. A tampon according to claim 1, said tampon being attached to said first end by stitching.

17. A tampon according to claim 1, said tampon being attached to said first end by fusion.

18. A tampon according to claim 1, said tampon being attached to said first end with a substantially liquid-impermeable join.

19. A method of manufacturing a hygienically disposable tampon comprising:

taking a tampon body having a head end and a tail end, and

attaching a sheath, being longer than a length of said tampon body, to said tail end.

20. A method according to claim 19, further comprising attaching a withdrawal string to said tail end, said withdrawal string being of sufficient extension from said tail end to reach above said head end to close to said sheath over said head end.

21. A method according to claim 19, further comprising using a material substantially impervious to fluids to form said sheath.

22. A method according to claim 21, said material being plastic.

23. A method according to claim 22, said plastic being nylon.

24. A method according to claim 21, said material being rubber.

25. A method according to claim 19, said attaching of said sheath being by fusion.

26. A method according to claim 19, said attaching of said sheath being with a substantially liquid-impermeable join.

27. A method according to claim 19, said attaching of said sheath being by gluing.

28. A method according to claim 19, said attaching of said sheath being by stitching.

29. A tampon comprising a tampon body having a first end and a second end and a sheath having a first side and a second side, attached to said first end, said tampon having an in-use state with said sheath extending distally from said first end with said first side presented outwardly, said tampon further having a second, disposal state with said sheath extending from said first end to said second end and closed over said second end with said second side presented outwardly.

30. A tampon according to claim 29, further comprising a withdrawal string attached to said first end, said withdrawal string being of sufficient length to extend beyond said second end to close said sheath beyond said second end in said disposal state.

31. A tampon according to claim 29, said sheath comprising a liquid impervious material.

32. A tampon according to claim 31, said liquid impervious material being plastic.

33. A tampon according to claim 32, said plastic being nylon.

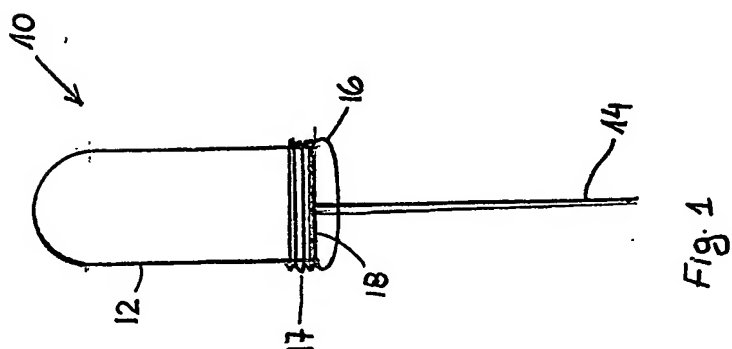
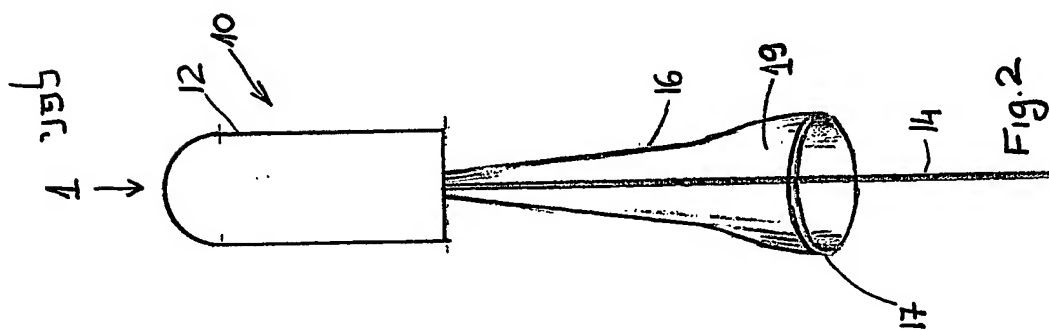
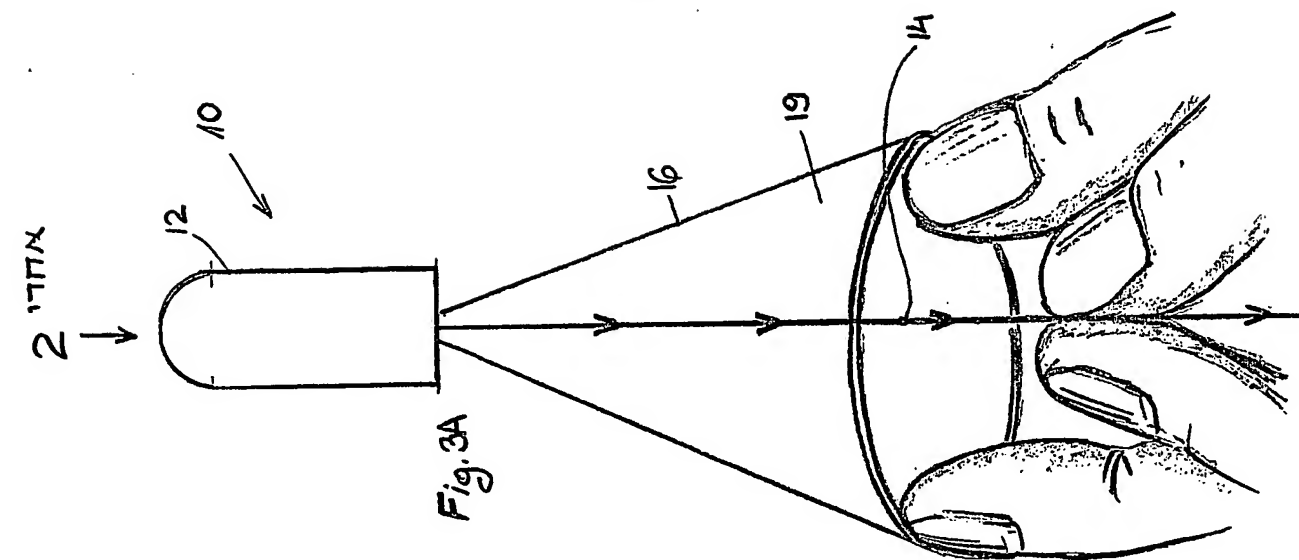
34. A tampon according to claim 32, said liquid-impervious material being rubber.

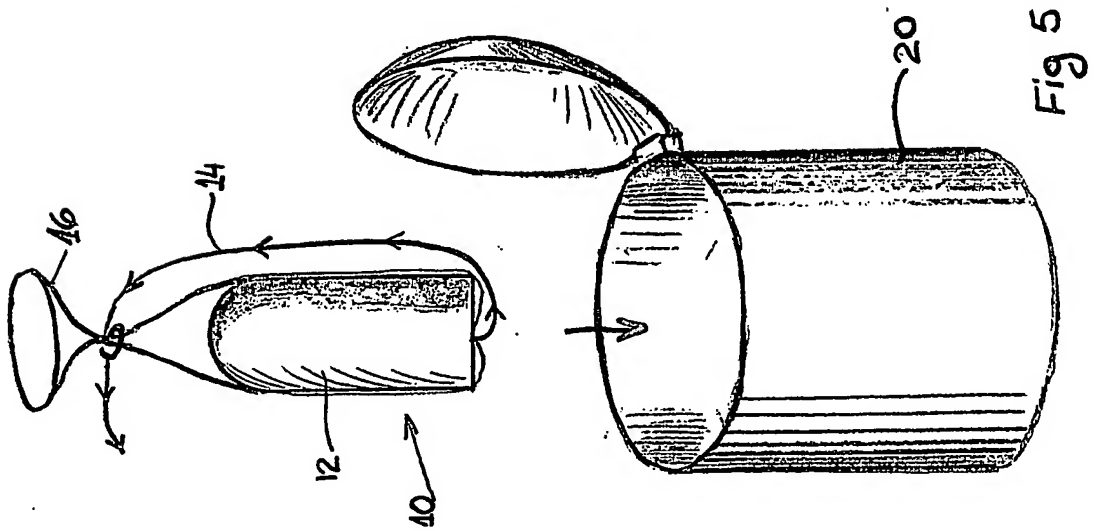
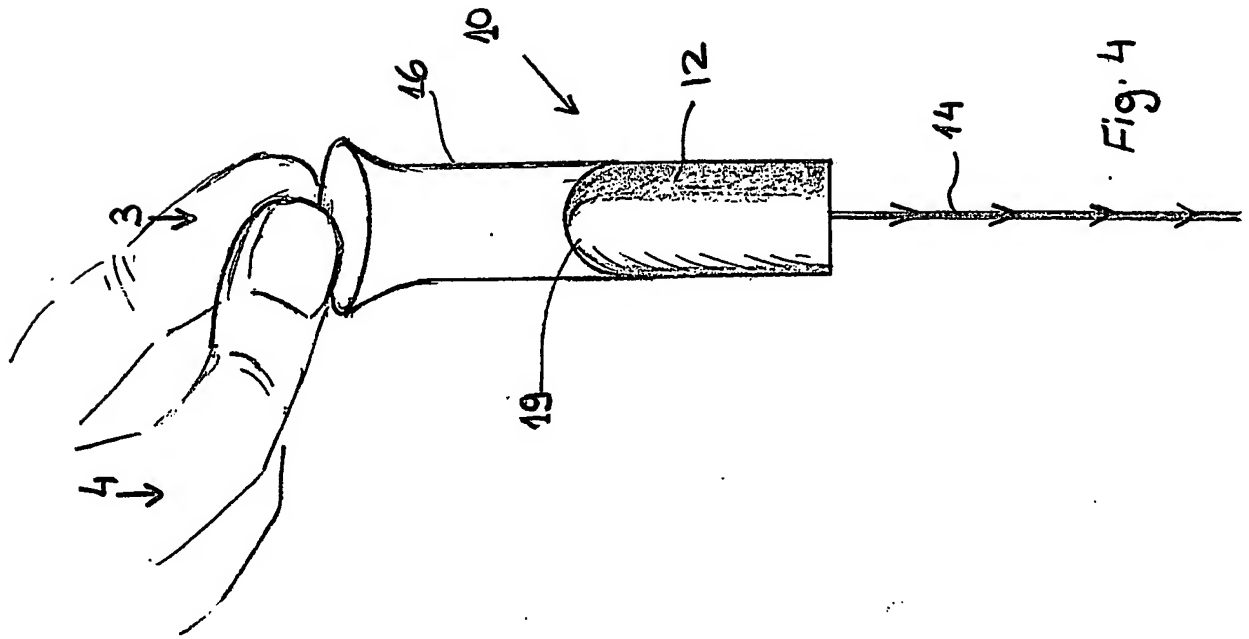
35. A tampon according to claim 29, said sheath being attached to said first end by glue.

36. A tampon according to claim 29, said tampon being attached to said first end by stitching.

37. A tampon according to claim 29, said tampon being attached to said first end by fusion.

38. A tampon according to claim 29, said tampon being attached to said first end with a substantially liquid-impermeable join.





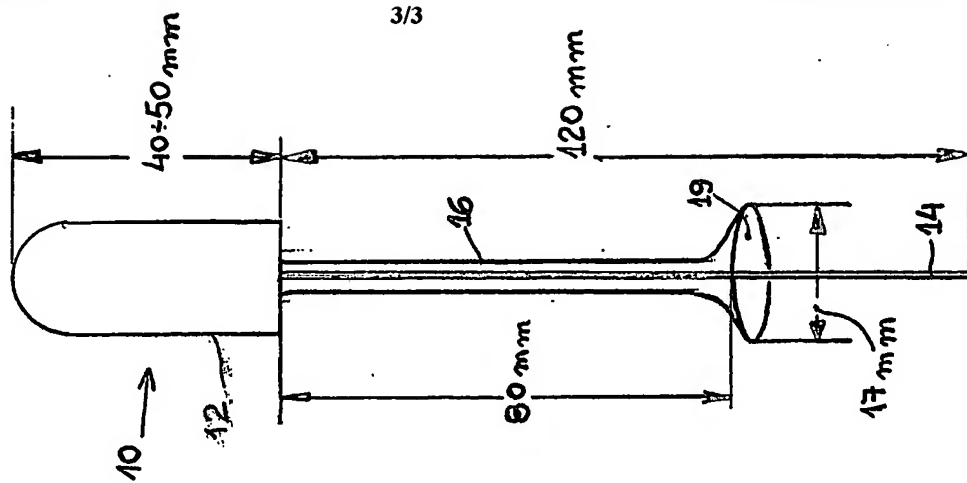


Fig. 6

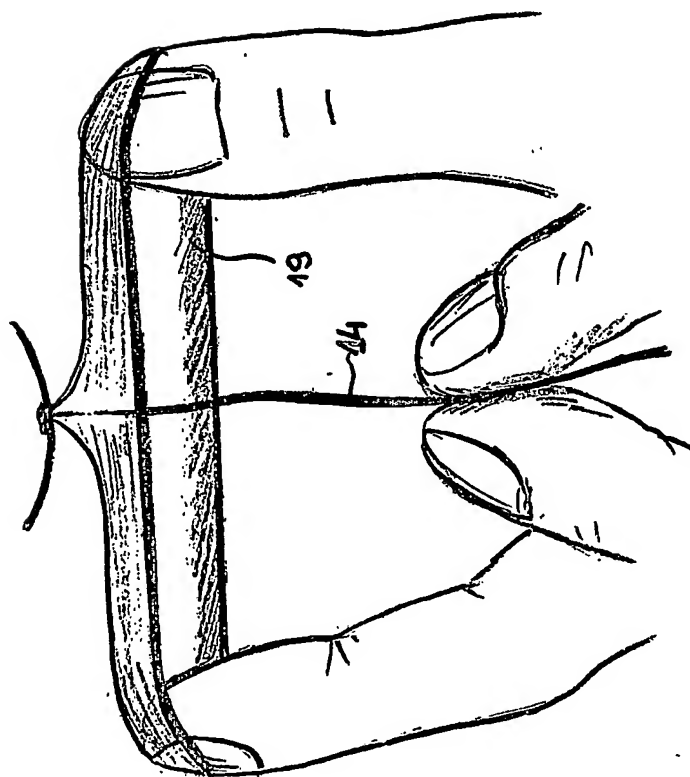


Fig. 3B